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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN SANTHOFF, STEVEN A. MOORE,
and BRUCE W. WATKINS

Appeal 2008-1413
Application 10/719,903
Technology Center 2600

Decided: February 5, 2009

Before JOHN C. MARTIN, MARK NAGUMO, and SCOTT R. BOALICK, *Administrative Patent Judges.*

MARTIN, *Administrative Patent Judge.*

DECISION ON REQUEST FOR REHEARING

Appellants request rehearing of the August 11, 2008, Decision on Appeal to the extent we entered new grounds of rejection of claim 1[1] under 35 U.S.C. § 102(e) for anticipation by McCorkle[2] and alternatively under

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[1] The Request for Rehearing incorrectly states (at 4) that the new grounds of rejection apply to claims 1-25.

[2] McCorkle U.S. Patent 7,177,341.

§ 103(a) for obviousness over McCorkle in view of Fischer.[3] Decision 21-25. We have jurisdiction under 35 U.S.C. § 6(b).

For the following reasons, the Request for Rehearing has been considered but is denied.

As explained in the Decision at page 25, the anticipation rejection is based on inherency. To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either expressly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

> To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.* at 1269, . . . 20 U.S.P.Q.2d at 1749 (quoting *In re Oelrich*, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981)).

In re Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999).

Claim 1 reads:

> 1. A communication system comprising:
>
> a receiver structured to receive a substantially continuous sine wave carrier signal, the signal modulated to contain communication data;

[3] Fischer et al. U.S. Patent 6,360,075.

a demodulator communicating with the receiver, the demodulator structured to demodulate the communication data from the substantially continuous sine wave carrier signal; and

a transmitter coupled to the demodulator, the transmitter structured to transmit a plurality of electromagnetic pulses[4], with the pulses configured to include the communication data.

Claims App., Br. 8.

McCorkle's Figure 2, which appears at page 22 of the Decision, is reproduced below for convenience.

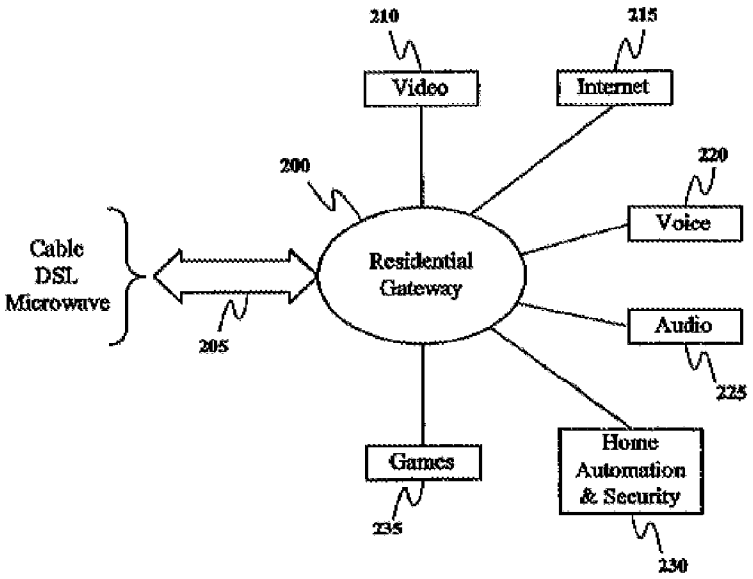

Fig. 2

[4] "[U]ltra-wideband (UWB) communication technology employs discrete pulses of electromagnetic energy that are emitted at, for example, nanosecond or picosecond intervals (generally tens of picoseconds to a few
(Continued on next page.)

Figure 2 is a block diagram showing how a transceiver employing a UWB transceiver according to a preferred embodiment can facilitate wireless communications between different appliances and external communication networks by way of a residential gateway (*id.*, col. 6, ll. 48-52).

Residential gateway 200 includes a UWB transceiver or UWB radio that enables it to serve as a hub for limited-range UWB communication with a variety of electronic devices (*id.*, col. 7, ll. 30-37), such as digital video devices 210, Internet-enabled appliances 215, voice transmission devices 220, audio transmission devices 225, home automation and security devices 230, and games 235. *Id.*, col. 7, ll. 48-53. McCorkle also explains that "it would be particularly advantageous if these devices could communicate with the residential gateway 200, which could coordinate their action with a remote source (not shown) over a carrier 205, e.g., a cable provider, digital subscriber line, or microwave link." *Id.*, col. 7, ll. 42-47.

As explained in the Decision, the rejections are based on McCorkle's disclosure of using residential gateway 200 to convert data received from a *remote* source over non-UWB channel 205 (e.g., a microwave link) into UWB radio pulses that are communicated to the local electronic devices, and vice-versa. Such conversion allows "[d]igital video devices 210 [to] communicate digitized video data to the residential gateway 200 for

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nanoseconds in duration)." Specification 7:7-9.

distribution to the remote source over the carrier 205" (*id.*, col. 7, ll. 55-57) and allows "[v]oice transmission devices 220 [to] convey voice data to the remote source and receive voice data from the remote source via the residential gateway 200 and carrier 205, e.g., as with an Internet telephone." *Id.*, col. 7, l. 66 to col. 8, l. 2. McCorkle also gives several other examples of such conversion:

> Audio players 225 such as MP3 players might transmit and receive audio data to and from the residential gateway. As above, this data could be transmitted to/from the remote source via the carrier 205, or might simply be transmitted to/from another local audio device 225.
>
> . . . .
>
> Games 235 and other devices, where data is exchanged between different processors, can also be conveniently handled by a UWB radio according to preferred embodiments of the present invention. As noted above, these devices could communicate with remote devices through the residential gateway 200 and the carrier 205, or could communicate with other local devices via the residential gateway 200 alone.

Id., col. 8, ll. 7-11, 19-26.

McCorkle's Figure 3, which appears at page 23 of the Decision and is reproduced below, is a block diagram of a preferred embodiment of a UWB radio (*id.*, col. 6, ll. 53-54) for use in residential gateway 200 (*id.*, col. 7, ll. 30-33) and in each of the electronic devices (*id.*, col. 7, ll. 48-53).

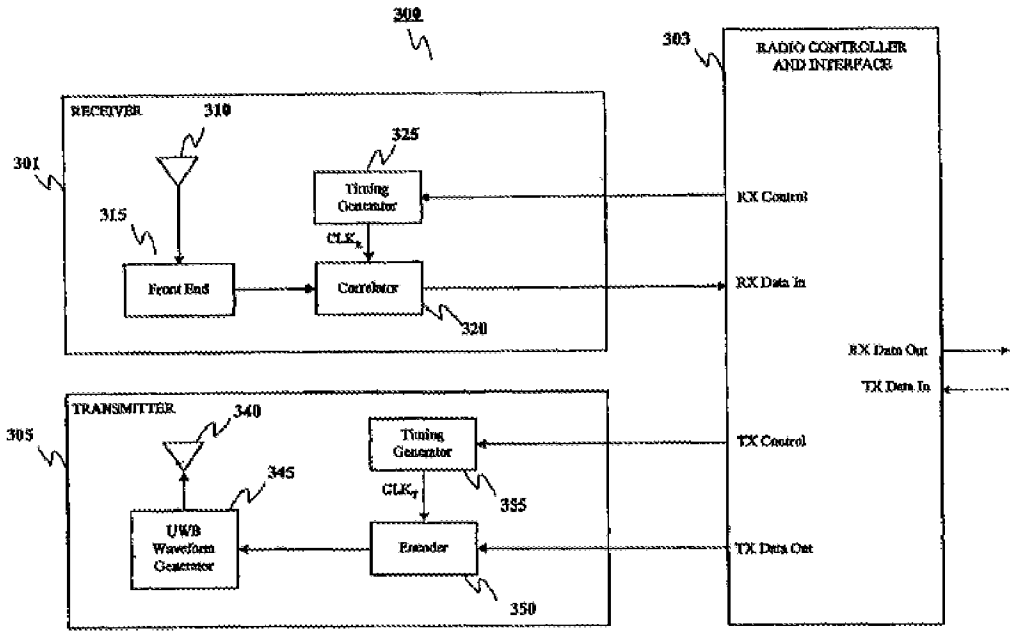

Fig. 3

As explained in the Decision (at 24), although McCorkle thus discloses converting non-UWB (e.g., microwave) data on carrier 205 into UWB radio pulses and vice-versa, McCorkle does not explain how that conversion is accomplished. We nevertheless found that "in the case where carrier 205 is a microwave carrier, the artisan would have understood that the data is necessarily in the form of modulations of a continuous sine wave microwave carrier, from which the data must be recovered by using a suitable microwave receiver and demodulator" (Decision 24-25). We further found that in order for the UWB radio in residential gateway 200 to convert microwave carrier data into UWB radio pulses and vice-versa, carrier 205 presumably is coupled to the "TX Data In" and "RX Data Out" terminals of

interface 303 (*id.* at 24), which finding assumes that the microwave receiver and demodulator are part of interface 303. Upon further consideration, we find that because the terminals in question are identified as "Data" terminals, the microwave receiver and demodulator (and the microwave modulator and transmitter that are required when sending data from residential gateway 200 to the remote source over carrier 205) may be either located inside interface 303 or located outside of interface 303 and connected thereto through the "TX Data In" and "RX Data Out" terminals. This revised finding, however, does not affect our conclusion that the claimed subject matter is either anticipated by McCorkle or would have been obvious over McCorkle in view of Fischer.

Appellants argue that no conversion of narrow band (i.e., non-UWB) signals to UWB signals occurs in residential gateway 200 because carrier 205 carries UWB signals. Req. Reh'g 5. Appellants' position is inconsistent with McCorkle's description of the UWB radio as being "particularly well suited for *limited range* . . . communication" with the consumer devices (McCorkle, col. 7, ll. 36-40) (emphasis added) and with the description of residential gateway 200 as coordinating the actions of those devices "with a *remote* source (not shown) over a carrier 205, e.g., a cable provider, digital subscriber line, or microwave link." *Id.*, col. 7, ll. 42-47 (emphasis added). Thus, not only does McCorkle fail to state that carrier 205 can take the form of a UWB radio link, McCorkle's UWB radio lacks sufficient range to serve

as an alternative capable of performing the function of carrier 205 when implemented as a cable provider, digital subscriber line, or microwave link.

As support for their position that carrier 205 is a UWB link, Appellants argue that McCorkle discloses a multi-mode radio that transmits and receives only UWB signals or only FM signals, depending on the selected mode of operation. Req. Reh'g 7-8. We agree that the radio depicted in block diagram form in Figure 5 permits selection between UWB and narrowband modes. *See id.*, col. 14, ll. 27-29 ("The second signal switch 535 [Fig. 5] and the TX data switch 547 determine the operation mode of the transceiver 500, either a UWB mode or a narrowband (NB) mode . . . ."). Specifically, the NB mode involves FM signals. *See id.*, col. 14, ll. 39-40 ("[I]n an NB mode the first divide circuit 540 provides either an FM sign[al] or a tone to the second signal switch 535."). Also, the radio depicted in Figure 5 includes an antenna switch 510 that permits the single antenna 505 to be used for reception or transmission. *Id.*, col. 14, ll. 63-67. Appellants' argument is unconvincing, however, because it incorrectly assumes that residential gateway 200 uses antenna 505 for communications over carrier 205 with the remote source. For the reasons given above in the discussion of Figure 3, carrier 205 is instead connected to the radio circuitry in residential gateway 200 through the "TX Data In" and "RX Data Out" terminals of the interface 303, which corresponds to interface 595 in Figure 5.

Appellants also rely on several quoted passages from McCorkle. The first passage, which concerns the UWB radio depicted in Figure 3, is reproduced by Appellants as follows:

> "The radio controller and interface 303 serves as an [*sic*] media access control (MAC) interface between the UWB wireless communication functions implemented by the receiver 301 and transmitter 305, and applications that use the UWB communications channel for exchanging data with remote devices" (col. 8, lines 46-51).

Req. Reh'g 5-6. Although the term "remote devices" appears to refer to devices that are coupled to residential gateway 200 through carrier 205 (McCorkle, col. 8, ll. 22-24), the phrase "applications that use the UWB communications channel for exchanging data with remote devices" does not imply that UWB communications are exclusively used to exchange data with those devices. This descriptive language is broad enough to read on using (a) UWB communications to exchange data between a local device (e.g., 210, 215, 220, 225, 230, or 235) and residential gateway 200 and (b) a non-UWB (e.g., microwave) carrier 205 to exchange the data between residential gateway 200 and the remote devices.

Another passage on which Appellants rely for their interpretation that carrier 205 is a UWB link concerns Figure 9, which is reproduced below:

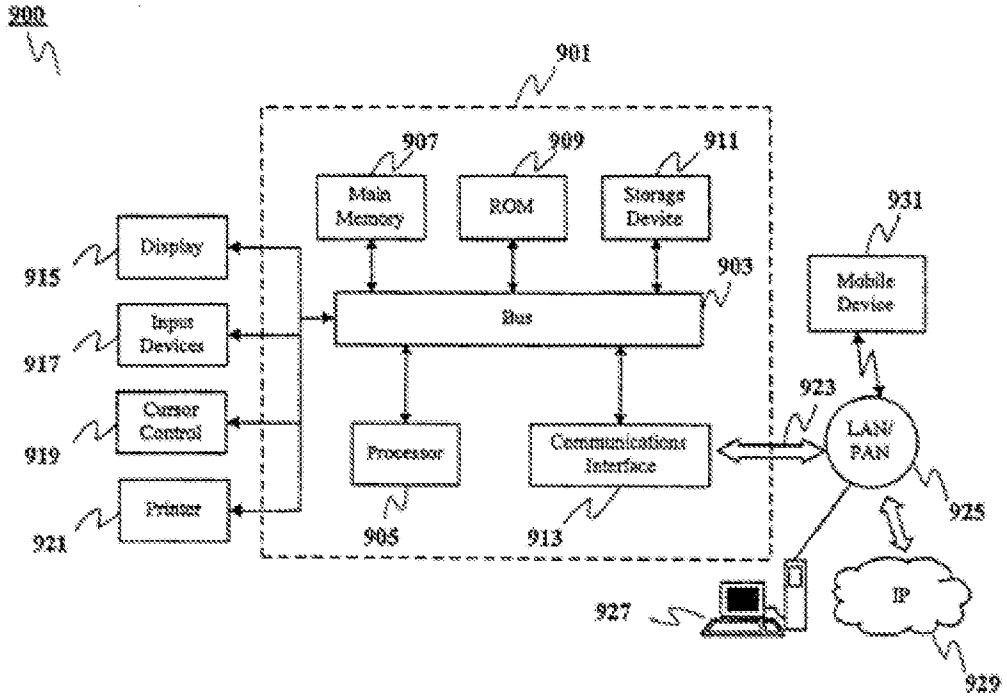

Fig. 9

Figure 9 illustrates a processor system 900 according to a preferred embodiment of the present invention that includes a processor unit 901, peripheral devices 915, 917, 919, 921, a network link 923, a communications network 925, a host computer 927, an Internet Protocol (IP) network 929, and a mobile device 931. *Id.*, col. 22, ll. 41-47. Appellants quote the discussion of communication interface 913 in processor 901 as follows:

> "The communications interface 913 provides a two-way UWB data communication coupling to a network link 923, which is connected to the communications network 925. The communications network 925 may be a local area network

> (LAN), a personal area network (PAN), or the like. For example, the communication interface 913 may be a network interface card and the communications network may be a packet switched UWB-enabled PAN. As another example, the communication interface 913 may be a UWB accessible asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card, or a modem to provide a data communication connection to a corresponding type of communications line" (col. 24, lines 55-67).

Req. Reh'g 6. The above-quoted passage has no apparent relevance to the Figure 2 embodiment and more particularly to the matter of how residential gateway 200 communicates over carrier 205 with a remote source.

The next passage relied on concerns Figure 14 (not reproduced below). That figure is a block diagram of a preferred embodiment of Radio Controller Processor and Interface (RCPI) 595 of Figure 5 (*id.*, col. 17, ll. 15-16), which as noted above shows a transceiver that includes switches for selecting between receive and transmit modes and between UWB and narrowband (NB) modes. The cited passage is reproduced by Appellants as follows:

> "The MAC (Media Access Control) 1450, is the process that establishes the protocol that each radio uses to establish a connection and pass data. It is the interface between the a [*sic*] host computer, for example, and the physical radio" (col. 18, lines 34-38).

Req. Reh'g 6. Appellants have not adequately explained, nor is it apparent, how this passage supports their position.

At page 25 of the Decision, we held, as an alternative to our finding that McCorkle inherently includes a receiver and demodulator for recovering the data transmitted on carrier 205 when it is implemented as a microwave carrier, that

> it would have been obvious in view of the repeater apparatus shown in Fischer's Figure 2 (particularly antennas 124a-f, receivers 130a-f, and QPSK demodulators 132a-f) that the data received from a remote source via McCorkle's carrier 205 can take the form of modulations of a continuous sine wave carrier signal and can be recovered therefrom by a microwave antenna, receiver, and demodulator.

Appellants argue that the motivation to combine McCorkle and Fischer in this manner "can only come from improper hindsight reconstruction" because "McCorkle's transceiver can already receive frequency modulated signals in 'narrowband mode' (see the above discussion of McCorkle's 'either-or' operation modes)" and that "[c]onsequently, Fischer's teachings are utterly superfluous." Req. Reh'g 9. This argument is unpersuasive because, as explained above, the ability of McCorkle's radio to receive frequency modulated, narrowband signals is not involved in communications between the residential gateway and a remote source using carrier 205.

For the foregoing reasons, Appellants have failed to persuade us that we erred in rejecting claim 1 under 35 U.S.C. § 102(e) for anticipation by McCorkle or in rejecting claim 1 under § 103(a) for obviousness over McCorkle in view of Fischer.

DECISION

The Request for Rehearing is denied.

DENIED

msc

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